

# 6BE6

## Pentagrid Converter

### 7-PIN MINIATURE TYPE

#### GENERAL DATA

##### Electrical:

Heater, for Unipotential Cathode:

Voltage (AC or DC) . . . . . 6.3  $\pm$  10% volts  
Current at 6.3 volts. . . . . 0.3 amp

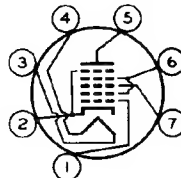
Direct Interelectrode Capacitances:

	<i>Without External Shield</i>	<i>With External Shield<sup>a</sup></i>	
Grid No.3 to all other elec- trodes (RF input) . . . . .	7	7	$\mu$ f
Plate to all other electrodes (Mixer input) . . . . .	8	13	$\mu$ f
Grid No.1 to all other elec- trodes (Oscillator input) . .	5.5	5.5	$\mu$ f
Grid No.3 to plate. . . . .	0.3 max.	0.25 max.	$\mu$ f
Grid No.3 to grid No.1. . . .	0.15 max.	0.15 max.	$\mu$ f
Grid No.1 to plate. . . . .	0.1 max.	0.05 max.	$\mu$ f
Grid No.1 to cathode & grid No.5 .	3	3	$\mu$ f
Cathode & grid No.5 to all other electrodes except grid No.1. .	15	20	$\mu$ f

##### Mechanical:

Operating Position. . . . . Any  
Maximum Overall Length. . . . . 2-1/8"  
Maximum Seated Length . . . . . 1-7/8"  
Length, Base Seat to Bulb Top (Excluding tip) . . 1-1/2"  $\pm$  3/32"  
Diameter. . . . . 0.650" to 0.750"  
Dimensional Outline . . . . . See *General Section*  
Bulb. . . . . T5-1/2  
Base. . . . . Small-Button Miniature 7-Pin (JEDEC No.E7-1)  
Basing Designation for BOTTOM VIEW. . . . . 7CH

Pin 1 - Grid No.1  
Pin 2 - Cathode,  
Grid No.5  
Pin 3 - Heater  
Pin 4 - Heater



Pin 5 - Plate  
Pin 6 - Grid No.2,  
Grid No.4  
Pin 7 - Grid No.3

#### CONVERTER

##### Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE . . . . . 330 max. volts  
GRID-No.3 (CONTROL-GRID) VOLTAGE:  
Negative-bias value . . . . . 55 max. volts  
Positive-bias value . . . . . 0 max. volts  
GRIDS-No.2 & No.4 (SCREEN-GRID)  
SUPPLY VOLTAGE. . . . . 330 max. volts  
GRIDS-No.2 & No.4 VOLTAGE . . . . . 110 max. volts

← Indicates a change.



RADIO CORPORATION OF AMERICA  
Electron Tube Division  
Harrison, N. J.

DATA  
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CATHODE CURRENT . . . . .	15.5	max.	ma
GRIDS-No.2 & No.4 INPUT . . . . .	1.1	max.	watts
PLATE DISSIPATION . . . . .	1.1	max.	watts
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode . . . . .	200	max.	volts
Heater positive with respect to cathode . . . . .	200 <sup>b</sup>	max.	volts

## Characteristics:

### *With separate excitation<sup>c</sup>*

Plate Voltage . . . . .	100	250	volts
Grid-No.3 Voltage . . . . .	-1.5	-1.5	volts
Grids-No.2 & No.4 Voltage . . . . .	100	100	volts
RMS Grid-No.1 (Oscillator Grid) Voltage. . . . .	10	10	volts
Grid-No.1 Resistor. . . . .	20000	20000	ohms
Plate Resistance (Approx.). . . . .	0.4	1	megohm
Conversion Transconductance . . . . .	455	475	$\mu$ mhos
Grid-No.3 Voltage (Approx.) for			
conversion transconductance ( $\mu$ mhos) =			
10. . . . .	-30	-30	volts
100 . . . . .	-6	-6	volts
Plate Current . . . . .	2.6	2.9	ma
Grids No.2 & No.4 Current . . . . .	7	6.8	ma
Grid-No.1 Current . . . . .	0.5	0.5	ma
Cathode Current . . . . .	10.1	10.2	ma

## Oscillator Characteristics (Not Oscillating):

### *With grids No.2 & No.4 connected to plate*

Plate and Grids-No.2 & No.4 Voltage . . . . .	100	volts
Grid-No.3 Voltage . . . . .	0	volts
Grid-No.1 Voltage . . . . .	0	volts
Amplification Factor between grid No.1 and		
grids No.2 & No.4 connected to plate. . . . .	20	
Transconductance between grid No.1 and		
grids No.2 & No.4 connected to plate. . . . .	7250	$\mu$ mhos
Cathode Current . . . . .	25	ma
Grid-No.1 Voltage (Approx.) for plate $\mu_a = 10$ . . . . .	-11	volts

<sup>a</sup> With external shield JEDEC No.316 connected to cathode.

<sup>b</sup> The dc component must not exceed 100 volts.

<sup>c</sup> The characteristics shown with separate excitation correspond very closely with those obtained in a self-excited oscillator circuit operating with zero bias.

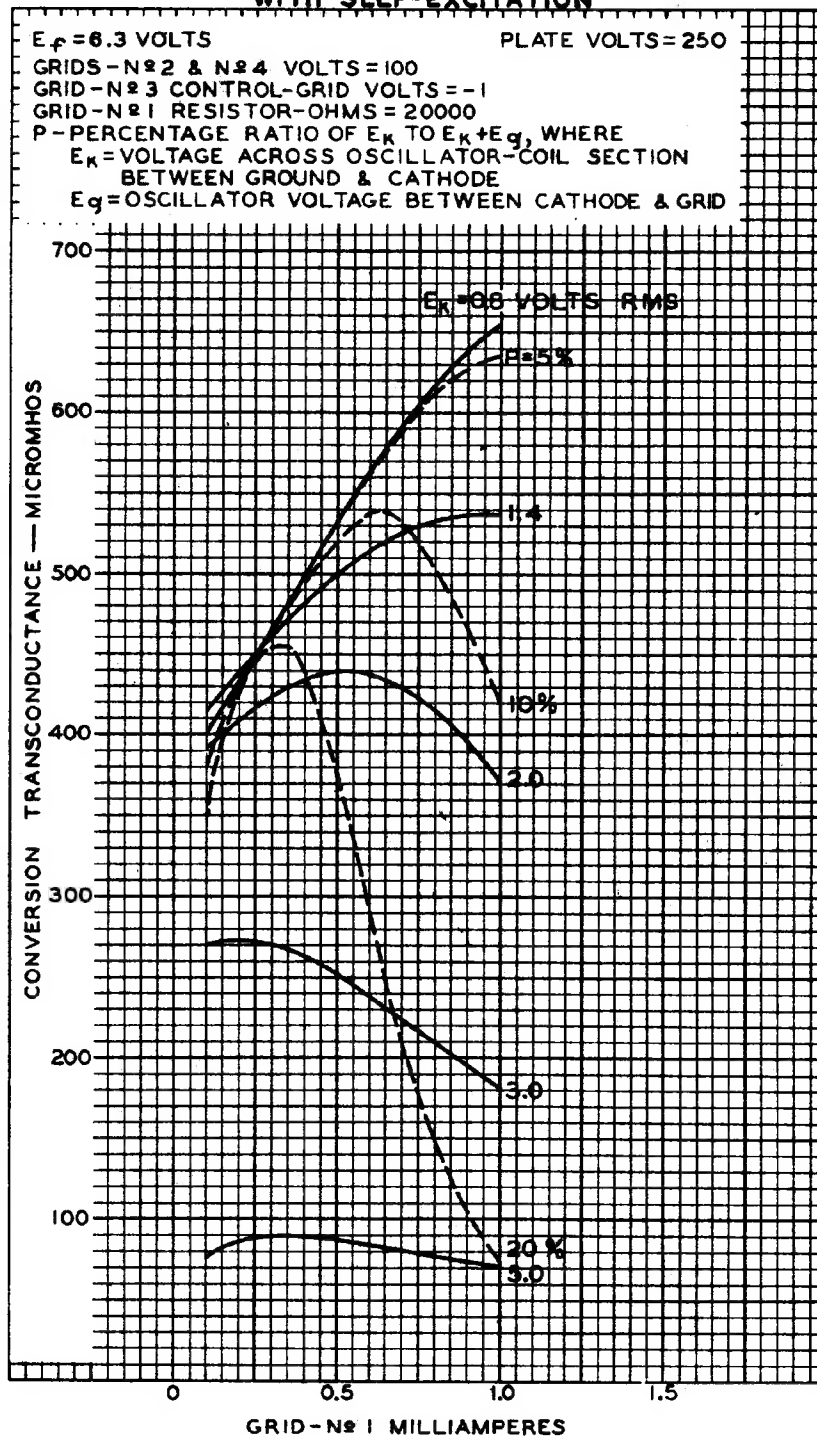




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# OPERATION CHARACTERISTICS WITH SELF-EXCITATION



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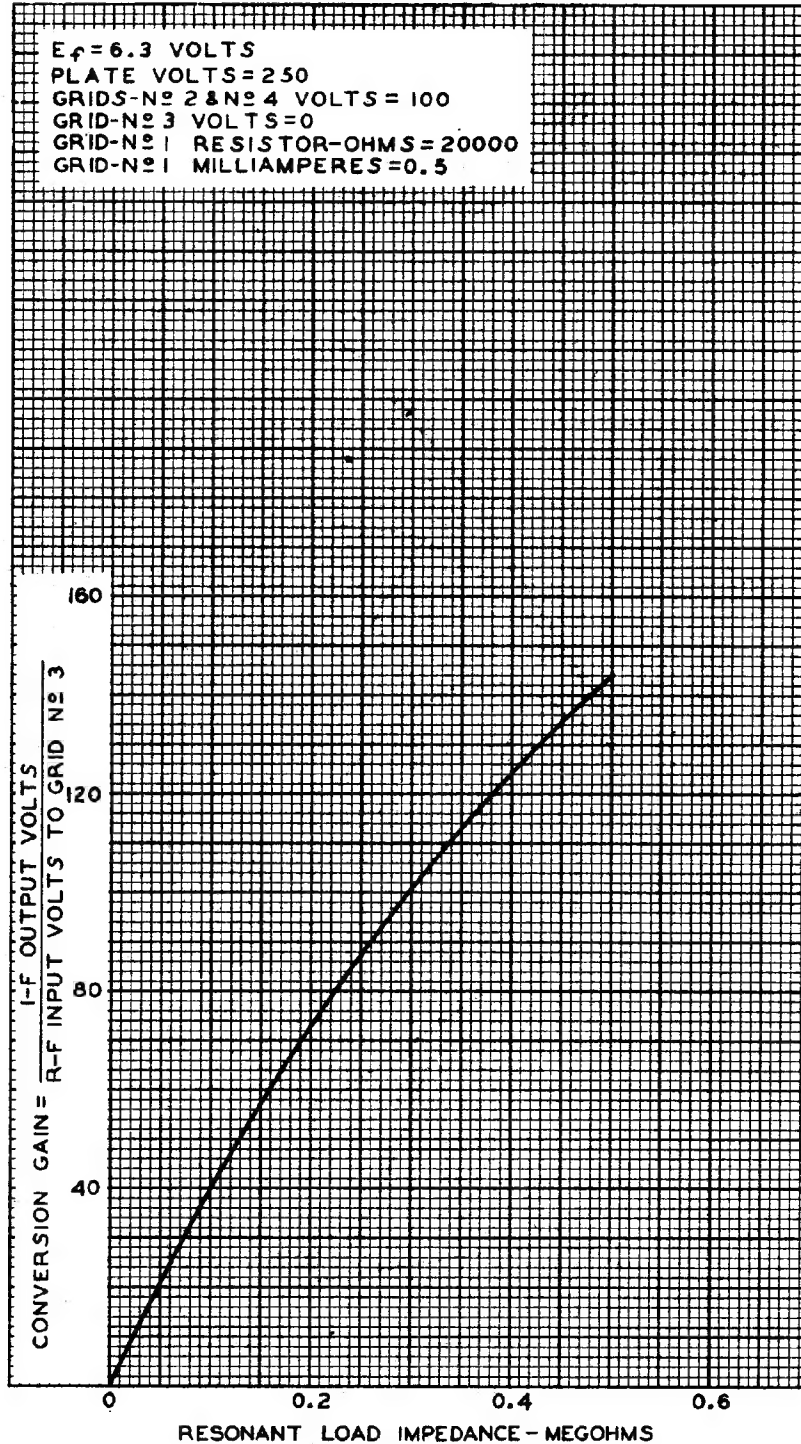
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# OPERATION CHARACTERISTIC WITH SELF-EXCITATION



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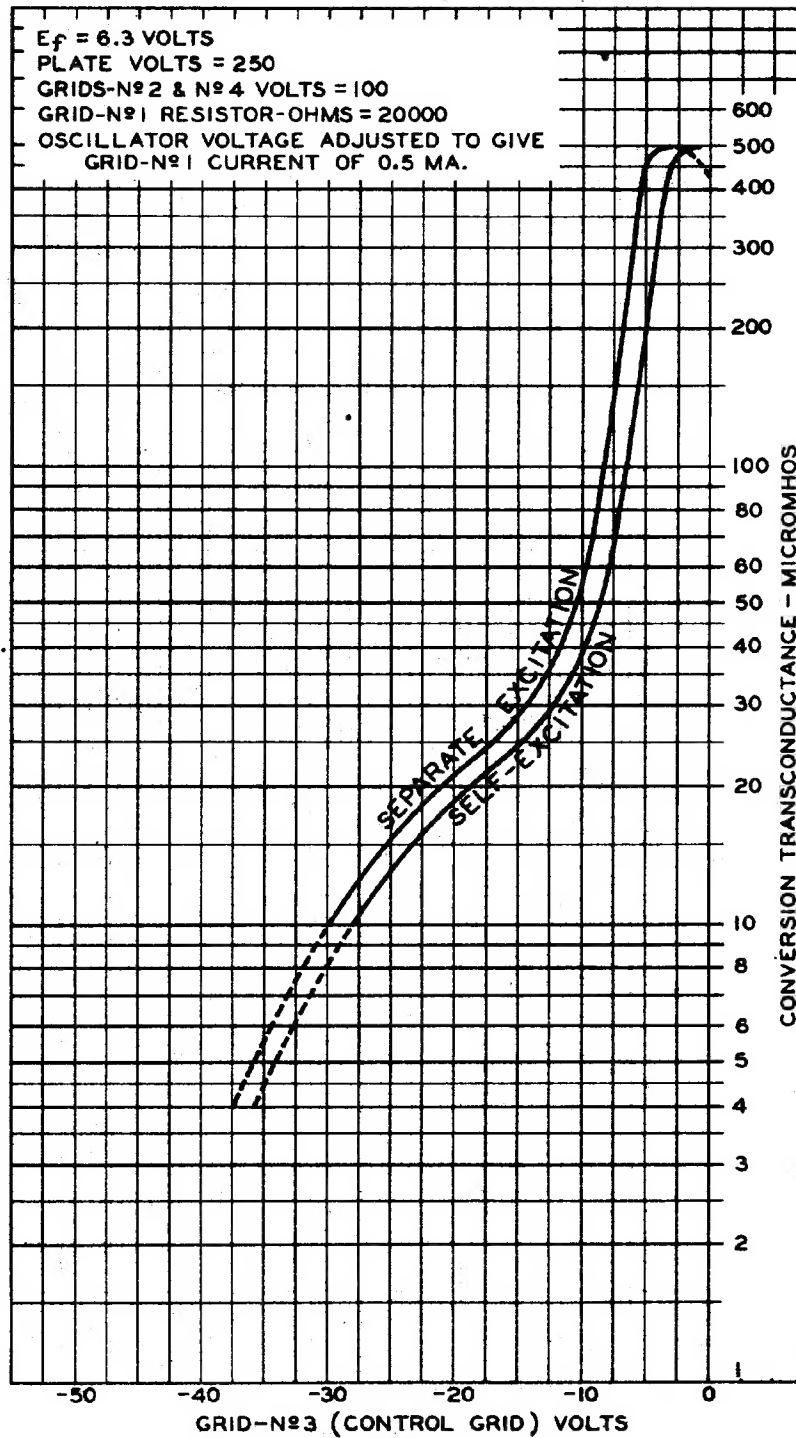
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# OPERATION CHARACTERISTICS



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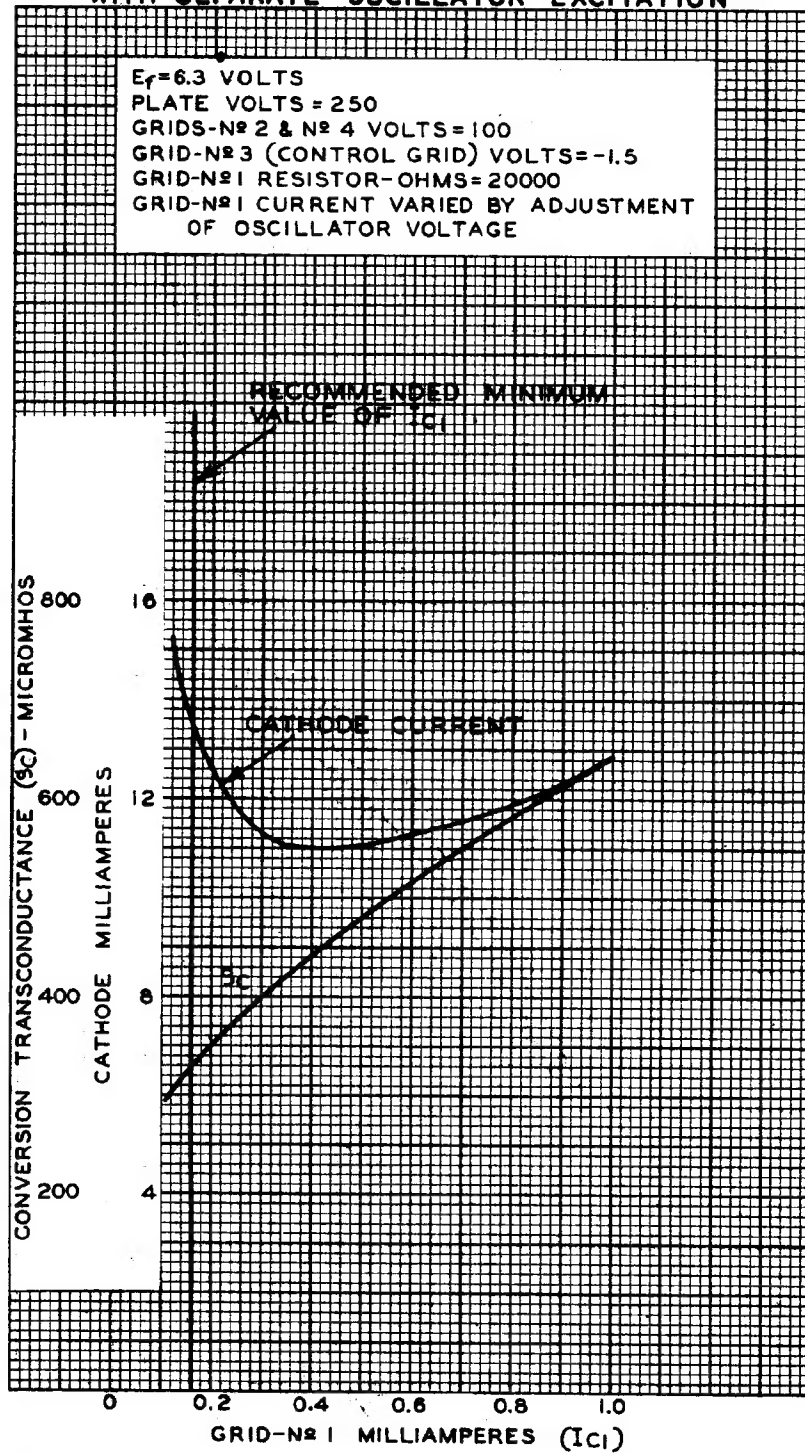
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# OPERATION CHARACTERISTICS WITH SEPARATE OSCILLATOR EXCITATION



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